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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,715	11/14/2003	Gabriella Cerrato Jay	TEC1302	2102

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EXAMINER	
ORDERS, CHRISTOPHER H	
ART UNIT	PAPER NUMBER
3746	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,715	GABRIELLA JAY ET AL.	
	Examiner	Art Unit	
	Christopher H. Orders	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *November 14, 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Specification

1. The disclosure is objected to because of the following informalities: The recitation of "opening 54" (para. 0017, ln. 14) is presumed to be --open end 54-- to properly reference the drawings and avoid confusion with "opening 64."

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 12-13, 17-19, 21, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Makino et al. (6,544,009).

Makino et al. teach a hermetic compressor for use with a compressible vapor, said compressor comprising: a housing (1) having a wall defining an interior plenum; a fluid port (12) defining a passageway through said wall and in communication with said interior plenum; a motor (3) disposed within said housing (1); a compression mechanism (2) disposed within said housing (1) and operably connected to said motor (3); and a tuner (42, fig. 6) having an open end and an opposite closed end, said tuner (42, fig. 6) defining a resonating cavity extending from said open end to said closed end

(col. 6, ln. 29-32), said resonating cavity in direct communication with said interior plenum via said open end, and said open end in indirect communication with said fluid port (12) via said interior plenum; said tuner (42, fig. 6) is mounted entirely within said interior plenum; said tuner (42, fig. 6) extends between said open and closed ends in a substantially straight configuration (as seen in fig. 6); said tuner (42, fig. 6) is mounted on said motor (3) (see fig. 4); said tuner (42) is mounted to an inner surface of said wall of said housing (1) (indirectly mounted to the housing: col. 4, ln. 37-40); and said fluid port (12) defines a suction inlet wherein vapor at a suction pressure is communicated through said fluid port (12) to said interior plenum (col. 3, ln. 54-58).

Makino et al. further teach a method of attenuating the noise and vibration within a hermetic compressor having a housing (1) defining an interior plenum, a motor (3) disposed within the housing (1), a compression mechanism (2) disposed within the housing (1), a compressible vapor received within the interior plenum (col. 4, ln. 17-19), and a fluid port (12) defining a passageway through the housing (1) and in communication with the interior plenum, said method comprising the steps of: providing a tuner (42, fig. 6) defining a resonating cavity and having an open end and an opposite closed end, the resonating cavity defining a length between the open and closed ends; and positioning the tuner (42, fig. 6) such that the open end is in direct communication with the interior plenum and is in indirect communication with the fluid port (12) via the interior plenum; and positioning the tuner (42, fig. 6) includes mounting the tuner entirely within the interior plenum.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 14, 16, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makino et al. (6,554,009).

Makino et al. teach many of the claim limitations, but do not expressly teach that said tuner (42, fig. 6) is positioned exteriorly of said housing (1); and said tuner (42, fig. 6) extends between said open and closed ends in an arcuate configuration. However, it would have been obvious matter of design choice to modify the tuner of Makino et al. to be located exteriorly of the housing and to have it form an arcuate shape as applicant has not stated that either configuration solves any stated problem or is for any particular purpose and it appears that the tuner would perform equally well with the tuner in a straight or arcuate shape and interiorly or exteriorly mounted.

6. Claims 1-6, 8, and 10-11, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makino et al. (6,544,009) in view of Marks et al. (6,453,695).

Makino et al. teach many of the claim limitations including that the tuner is positioned vertically (see fig. 4), mounted to the stator (3a) (see fig. 4 and 6), and circular in cross section (see fig. 4) but do not expressly teach that the length of said tuner (42, fig. 6) is approximately one quarter of the wavelength of the pressure wave, the tuner defines an arcuate shape, a suction tube extends through a wall of the

housing, and the tuner is positioned horizontally. However, Marks et al. teach that the length of a resonating cavity (50) should be approximately one quarter of the pressure wave (col. 1, ln. 40-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the one-quarter wavelength length of the tube of Marks et al. with the tuner of Makino et al. for the benefit of reflecting the wave 180 degrees out of phase, which cancels the wave out (Marks et al. col. 1, ln. 37-40). Further, it would have been obvious matter of design choice to modify the tuner of Makino et al. to have it form an arcuate shape and positioned horizontally in addition to having a suction intake tube as applicant has not stated that these configurations solve any stated problem or is for any particular purpose and it appears that the tuner would perform equally well with the tuner in a straight or arcuate shape mounted horizontally or vertically and with or without a suction intake tube.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makino et al. (6,544,009) in view of Marks et al. (6,453,695) as applied to claim 1 above, and further in view of Hashimoto et al. (6,468,050).

Makino et al. teach many of the claim limitations, but do not expressly teach that said compressor defines a resonant frequency having a resonant wavelength and said length of said resonating cavity is approximately one quarter of the resonant wavelength. However, Hashimoto et al. teach that it is a problem that conventional compressors generate resonance (col. 2, ln. 26-28), and Marks et al. teach that the length of a resonating cavity (50) should be approximately one quarter of the pressure wave (col. 1, ln. 40-43). It would have been obvious to one of ordinary skill in the art at

the time the invention was made to use the one quarter wavelength length of the tube of Marks et al. and conventional compressor generating resonance as noted by Hashimoto et al. with the tuner of Makino et al. for the benefit of reflecting the resonant wave 180 degrees out of phase, which cancels the wave out (Marks et al. col. 1, ln. 37-40).

8. Claim 15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makino et al. (6,544,009) in view of Marks et al. (6,453,695) and Hashimoto et al. (6,468,050).

Makino et al. in view of Marks et al. teach many of the claim limitations, but do not expressly teach that the compressor defines a resonant frequency having a resonant wavelength. However, Hashimoto et al. teach that conventional compressors define a resonant frequency having a resonant wavelength (col. 2, ln. 26-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the resonating conventional compressor as noted by Hashimoto et al. with the tuner with one quarter wavelength length to attenuate the resonance as the resonance creates unpleasant noise (Hashimoto et al. col. 2, ln. 26-28).

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makino et al. (6,544,009) in view of Marks et al. (6,453,695) as applied to claim 1 above, and further in view of Tomell et al. (6,558,137).

Makino et al. in view of Marks et al. teach many of the claim limitations, but do not expressly teach that the interior plenum contains vapors at a suction pressure. However, Tomell et al. teach a compressor (104) defining an interior plenum which contains vapors at a suction pressure (col. 14, ln. 64-66). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to combine the compressor of Tomell et al. with the tuner with one-quarter wavelength length of Makino et al. in view of Marks et al. to attenuate pressure pulsations in a different type of compressor.

10. Claims 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makino et al. (6,544,009) in view of Tomell et al. (6,558,137).

Makino et al. teach many of the claim limitations including a tuner mounted to a motor (3), but do not expressly teach that the interior plenum contains vapors at a suction pressure and that the tuner is in direct communication with suction pressure vapors. However, Tomell et al. teach a compressor (104) defining an interior plenum including a motor (28) which contains vapors at a suction pressure (col. 14, ln. 64-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the compressor of Tomell et al. with the tuner to attenuate pressure pulsations in a different type of compressor.

11. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makino et al. (6,544,009) in view of Verkleeren (5,333,576).

Makino et al. teach many of the claim limitations, but do not expressly teach positioning a moveable piston in the resonating cavity and repositioning the piston to determine an optimum resonating cavity length. However, Verkleeren teaches positioning a moveable piston (326) in the resonating cavity (322) and repositioning the piston (326) to determine an optimum resonating cavity (322) length (col. 7, ln. 9-12). It would have been obvious to one of ordinary skill in the art at the time the invention was

made to combine the moveable piston of Verkleeren with the tuner of Makino et al. for the benefit of attenuating noise at the optimum wavelength depending on operating speed (col. 1, ln. 23-26).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dreher et al. (4,212,370) teach an exteriorly mounted tuner (18) as part of a discharge muffler. Yokomizo et al. (4,781,545) teach a compressor with a tubular discharge chamber.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher H. Orders whose telephone number is (571) 272-7163. The examiner can normally be reached on Monday-Friday, 6:30am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl J. Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CHO

CHERYL TYLER
SUPERVISORY PATENT EXAMINER